

Appl. No.: 10/685,377
Amtd. Dated: November 11, 2004
Reply to Office Action of August 20, 2004

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A modular armored vehicle system comprising an armored combat vehicle chassis having a plurality of openings and a plurality of composite armor plates for absorbing and dissipating kinetic energy from high velocity, armor-piercing projectiles, each of said plates being adapted for attachment to said chassis and sized to cover at least one of said openings wherein each of said plates comprises a single layer of bodies which are directly bound and retained in plate form by a solidified material wherein a majority of each of said bodies is in direct contact with at least four adjacent bodies, wherein the solidified material and the plate are elastic and wherein said bodies have a specific gravity of at least 2.4 and are made of a ceramic material.

Claim 2 (currently amended) A modular vehicle system according to claim 1 wherein said plate constitutes comprises an outer, impact receiving panel of a multilayered armor panel further comprising an inner layer adjacent to said outer plate, comprising a second ballistic panel, wherein said outer plate serves to deform and shatter an impacting high velocity armor-piercing projectile and said second ballistic panel is adapted to retain any remaining fragments from said projectile and from said bodies and to absorb remaining energy from said fragments.

Claim 3 (original) A modular armored vehicle system according to claim 1 wherein said bodies are in the form of pellets.

Claim 4 (original) A modular armored vehicle system according to claim 1 wherein said bodies are made of a ceramic material.

Appl. No.: 10/685,377
Amtd. Dated: November 11, 2004
Reply to Office Action of August 20, 2004

Claim 5 (original) A modular armored vehicle system according to claim 1 comprising a plurality of interchangeable plates, a first plurality of said plates having pellets sized to absorb and dissipate kinetic energy from high velocity armor-piercing 12.7 mm – 14.5 mm projectiles, a second plurality of said plates having pellets sized to absorb and dissipate kinetic energy from high velocity armor-piercing 14.5 mm – 30 mm projectiles, and a third plurality of said plates having pellets sized to absorb and dissipate kinetic energy from high velocity armor-piercing projectiles of over 30 mm.

Claim 6 (original) A modular armored vehicle system according to claim 1 wherein the bodies in said plates have a regular geometric cross-sectional area.

Claim 7 (original) A modular armored vehicle system according to claim 1 wherein the bodies in said plates are in the form of pellets having at least one convexly curved outwardly facing end face.

Claim 8 (original) A modular armored vehicle system according to claim 1 wherein the bodies in said plates have at least one circular cross-section.

Claim 9 (original) A modular armored vehicle system according to claim 1 wherein the bodies in said plates are in the form of pellets, each having at least one axis of at least 9 mm length and each of a majority of said pellets is in direct contact with at least four adjacent pellets in the same layer to provide mutual lateral confinement therebetween and said at least one axis is substantially perpendicular to the outer, impact-receiving face of said plate.

Claim 10 (original) A modular armored vehicle system according to claim 2 comprising a third backing layer for absorbing trauma.

Claim 11 (original) A modular armored vehicle system according to claim 10 wherein third layer is formed of a polymeric matrix composite with reinforcing fibers.

Appl. No.: 10/685,377
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Claim 12 (original) A modular armored vehicle system according to claim 11 wherein said reinforcing fibers are selected from the group consisting of carbon fibers, aramid fibers and glass fibers.

Claim 13 (original) A modular armored vehicle system according to claim 10 wherein said third backing layer is made of a metal material.

Claim 14 (original) A modular armored vehicle system comprising an armored combat vehicle chassis having a plurality of openings and a plurality of composite armor plates for absorbing and dissipating kinetic energy from high velocity, armor-piercing projectiles, each of said plates being adapted for attachment to said chassis and sized to cover at least one of said openings wherein each of said plates comprises a single layer of bodies which are directly bound and retained in plate form by a solidified material wherein a majority of each of said bodies is in direct contact with at least four adjacent bodies, wherein the solidified material and the plate are elastic and wherein said bodies having a specific gravity of at least 2.4 and are made of a ceramic material, wherein said plate constitutes an outer, impact receiving panel of a multilayered armor panel further comprising an intermediate layer adjacent to said outer plate, comprising a second ballistic panel, wherein said outer plate serves to deform and shatter an impacting high velocity armor-piercing projectiles and said second ballistic panel is adapted to retain any remaining fragments from said projectile and from said bodies and to absorb remaining energy from said fragments and further comprising a third innermost backing layer for absorbing trauma.